DECISION RECORD

EA LOG No.: OR-010-2002-02

Applicant: Lakeview BLM

Address: 1301 South G Street, Lakeview, OR 97630 County: Lake

BLM Office: Lakeview District Phone: 541/947-2177

DECISION RECORD

Decision:

Implement the preferred alternative to maintain approximately ninety existing water sources within WSAs in the Lakeview Resource Area. Maintenance would begin in late summer to fall of 2003 and continue long term until new data or information indicates the EA is no longer valid. Actual maintenance may be accomplished by the BLM, contract or grazing permittees. This decision is conditional, included in the decision is the option to avoid or mitigate pending the outcome of archeological surveys. A record of each survey is kept, including the Archeologist's recommendations which may include; avoidance of the site, salvage of data contained within the surface or deposits of the site, proceed as planned or no maintenance. All of the design features and Best Management Practices (BMPs) recommended in the preferred Alternative will be implemented.

Rationale:

The Proposed Plan (Preferred Alternative) would allow livestock, wild horses and wildlife to maintain their present distribution and habitat use. Maintenance of existing water sources would provide a means to improve livestock grazing strategies. Improved livestock management would enhance wilderness values by better protecting the rangeland in natural condition. Maintenance of fewer water sources would not meet the stated management objectives.

Four comment letters were received during the 30 day comment period. The location of Shingle Waterhole in Orejana Canyon WSA has been corrected on Map 4. An additional project Cleland Spring, project number 704282 was added to Fish Creek Rim WSA and Map 6 was updated. The additional project is within the scope of the Final Oregon Wilderness Environmental Impact Statement (FEIS; 1989). Twenty-one of the twenty-two projects indicated in the FEIS are included for maintenance in EA-OR-010-2002-2. The addition of one water source does not change the scope or analysis contained in the EA. No further comments were considered substantive enough to change the analysis or conclusion.

Thomas E. Rasmussen

Thomas E. Rasmussen, Manager

3/7/03

Date

FINDING OF NO SIGNIFICANT IMPACT

Waterhole, Reservoir and Well Cleanouts and Repair (Maintenance) Within Wilderness Study Areas in the Lakeview Resource Area EA-OR-010-2002-2

The Bureau of Land Management, Lakeview Resource Area, has analyzed a proposal and it's alternative to cleanout and repair (maintain) existing waterholes, reservoirs and one well within Wilderness Study Areas (WSAs) in the Lakeview Resource Area. Both alternatives would meet the non-impairment standards for WSAs, and would be in compliance with FLPMA and the BLM's Interim Management Policy for Lands Under Wilderness Review (H-8550-1). The waterholes and reservoirs are not located in RNA/ACECs. The proposed alternative is considered the best alternative because livestock, wild horses and wildlife would be dispersed through a large area, and maintenance of water sources would increase flexibility in grazing management strategies to protect resource values. This project is in conformance with the goals and objectives of the High Desert and Warner Lakes Management Framework Plans, as amended, and the Lakeview Grazing Management Environmental Impact Statement.

There are no floodplains, wild and scenic rivers, known hazardous waste areas, areas of religious concern, low income or minority populations, or prime or unique farmlands in the project area. No adverse impacts are anticipated to fisheries, lands, wetlands, minerals, air quality, ACEC/RNAs, cultural resources, Wilderness Study Areas, water quality, threatened or endangered species or noxious weeds. Beneficial impacts are anticipated to vegetative resources and wilderness values.

On the basis of the analysis contained in the attached EA and all other available information, it is my determination that none of the alternatives analyzed constitute a major federal action that would adversely impact the quality of the human environment. Therefore, an Environmental Impact Statement (EIS) is unnecessary and will not be prepared.

Thomas E. Rasmussen, Manager
Lakeview Resource Area

Date 1/2/03

Environmental Assessment Number OR-010-2002-02

Waterhole, Reservoir and Well Cleanouts and Repair (Maintenance)

Within Wilderness Study Areas (WSAs) in the Lakeview Resource Area (LRA)

Devils Garden Lava Bed OR-1-2

Squaw Ridge Lava Bed OR-1-3

Diablo Mountain OR-1-58

Orejana Canyon OR-1-78

Abert Rim OR-1-101

Fish Creek Rim OR-1-117

Spaulding OR-1-139

Hawk Mountain OR-1-146A

Sage Hen Hills OR-1-146B

Basque Hills OR-2-84

CHAPTER 1 – INTRODUCTION

Purpose and Need for Action

Livestock, wild horses and wildlife that depend on existing lakebed waterholes and reservoirs have been severely stressed during the last four years of drought conditions. Current conditions are ideal to maintain the existing water sources. Maintenance includes repairing existing dams, removing sediment that has filled the original development (cleanout) and other necessary repairs. The intent is to return the water storage capacity of each development to its original level, which provides water for animals in the area. The need is to quickly and efficiently implement the proposal to maintain water sources as conditions allow over the next several years. The projects are within Wilderness Study Areas (WSAs). BLM actions within WSAs are guided by the INTERIM MANAGEMENT POLICY FOR LANDS UNDER WILDERNESS REVIEW (IMP; 1995), and the Federal Land Policy and Management Act of 1976 (FLPMA). The purpose is to provide a site specific analysis of the expected actions for existing water sources outlined in the Final Oregon Wilderness Environmental Impact Statement (FEIS; 1989), and evaluate these actions based on the IMP.

Background

Ninety existing water sources are considered in this EA, and no new projects are proposed. Seventy-eight projects were constructed prior to FLPMA and maintenance of these projects is a permitted exception to IMP nonimpairment criteria. Twelve projects were constructed after the October 21, 1976 passage of FLPMA, two in Fish Creek Rim WSA, three in Spaulding WSA, one in Orejana WSA, and six in Basque Hills WSA. Therefore, twelve projects are subject to IMP nonimpairment standards. All projects in this EA were constructed prior to the statewide wilderness FEIS and were included in the FEIS as projects expected to be maintained.

A district wide EA for range improvement projects was written and signed in 1978 (EA –OR-010-78-5). Projects in the Spaulding and Basque Hills WSAs were recommended in EA-OR-010-77-34 to assist in management of the Beaty Butte Wild Horse Management Area. The waterholes in Basque Hills WSA were previously analyzed in EA-OR-78-43 for the purpose of livestock, wild horse and wildlife use and distribution. Projects in Fish Fin Rim WSA were recommended in an Allotment Management Plan and analyzed previously in EA-OR-010-83-35. The reservoir in Orejana was analyzed in EA-OR-010-81-71. Two projects in Spaulding WSA were analyzed in OR-010-82-14. Maintenance of existing waterholes developments has been previously analyzed in EAs OR-010-74-6, 77-7, 79-04, 82-14 and 91-4.

Conformance with Existing Plan(s)

This proposed action is in conformance with the following:
High Desert and Warner Lakes Management Framework Plans (MFPs), as amended (1983 and 1989), Lakeview Grazing Management FEIS and ROD (1982), Oregon Wilderness FEIS and ROD (1989 and 1991), The Interim Management Policy for Lands Under Wilderness Review (1995), Vegetation Treatment on BLM Lands in Thirteen Western States FEIS and ROD (1991), Supplement to the Northwest Area Noxious Weed Control Program FEIS and ROD (1987), Integrated Noxious Weed Control Program EA OR-013-93-03 (1994), Lakeview District Fire Management Plan - Phase 1 (1998), Rangeland Reform '94 FEIS and ROD (1995), Standards

for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management (BLM) in the States of Oregon and Washington (1997); Beaty Butte Allotment Management Plan and FEIS (1998); and the EAs described in the Background section on page 1.

For a detailed description of the planned or projected developments in each WSA refer to the narrative for Livestock Grazing, for the All Wilderness Alternative, in the Oregon Wilderness FEIS (1989) as follows;

Volume II	Page Number
Devils Garden Lava Bed	3
Squaw Ridge Lava Bed	29
Orejana Canyon	142,143
Abert Rim	166,167
Fish Creek Rim	191
Spaulding	245
Hawk Mountain	275
Sage Hen Hills	304
Diablo	103
Volume III	Page Number
Basque Hills	397

CHAPTER 2 - ALTERNATIVES INCLUDING THE PROPOSED PLAN

Plans Considered But Eliminated from Further Study

Four alternatives were considered but eliminated from further study. Hauling water was considered but eliminated because of high cost, man power and the need to improve roads which is not consistent with the current wilderness IMP.

Permanent wells, other than the existing homesteaded well at Devils Garden, were also considered but dropped because of noncompliance with the IMP.

A third alternative to reduce the number of wild horses below the Appropriate Management Level was considered but dropped because it did not comply with the Wild Free Roaming Horse and Burro Act of 1971.

The fourth alternative considered was development of new water sources outside WSA boundaries and the abandonment of adjacent waterholes inside the WSAs. This alternative was dropped for the following reasons.

- The existing water sources have been placed in locations that would effectively catch water runoff such as the low elevation point in a lakebed or a collection point on an intermittent stream.
- In most situations natural water sources are not available outside the WSA to implement this alternative. Well and pipeline systems outside the WSA are extremely expensive and would create a high visual contrast near the boundaries of WSAs.
- The Oregon Wilderness FEIS described the number of water sources in each WSA that would be maintained while the WSAs are under wilderness review.

▪Water sources are distributed throughout the Lakeview Resource Area in a manner that effectively provides for livestock management, wildlife and wild horse use. Limited development of new water sources would be considered as the need occurs because of the wide differences in resource concerns, goals and objectives throughout the area.

No Action Alternative - Alternative A

No action is the only feasible alternative to the proposed action. Under the no action alternative existing water developments would not be maintained and would eventually fill with sediment. Repairs would not be made to reservoir dams, spillways, water holding structures or to the Devils Well.

Proposed Plan (Preferred Alternative) - Alternative B

The proposed action is to maintain ninety existing waterholes, reservoirs and one well project within WSAs by repairing, maintaining and cleaning to the size and depth they were originally constructed using current BLM standards. In most cases, heavy equipment such as excavators, backhoes, or bull dozers would be used; however, this does not preclude the use of other types of equipment. In some situations blasting may be effective. Maintenance is necessary to provide water for livestock, wild horses and wildlife. Normally several projects would be maintained in an area during one year. The proposed actions would be implemented starting in the year 2003. The time frame between maintenance could be as short as 5-10 years, but more typically would be once every 10-20 years with an overall average of 5 projects maintained per year.

Design features to eliminate the need for mitigation include:

▪Access would be on existing cherry stemmed roads or ways to the extent possible. Any cross country travel would be kept to a minimum, however some maintenance would require cross country travel with heavy equipment once every 5-10 years as noted in the Wilderness EIS.
▪Possible mitigations for cross county travel, would include seeding equipment tracks with a native seed mix and raking seed into the soil with hand tools.
▪The least impacting equipment that would effectively complete the job would be used.
▪New soil surface disturbance would be confined to the area of the original project.
▪New material for dam and spillway repair would be taken from the original area or hauled from outside the WSA, rather than disturbance of a new area within a WSA.
▪The area of disturbance would be seeded with a native seed mix to blend with the surrounding area.
▪Equipment used in maintenance activities would be cleaned, usually by hosing the equipment with water, prior to travel to the project site, to prevent the spread of noxious weeds.
▪The majority of project maintenance would occur during dry or frozen conditions to reduce impacts to roads, ways and vegetation. If the soil surface is softened by inclement weather resulting in conditions that would cause damage to roads, ways and/ or the work area, maintenance would be halted or rescheduled.
▪Waterhole berms would be piled no higher than 5 feet above the ground surface, allowing for a four foot maximum height after settling. Berms would be shaped to blend with the surrounding area.
▪Bentonite or other sealers may be used to reduce the amount of water leaking through the soil. Bentonite could be hauled to the site by helicopter in areas where equipment would require cross country travel.
▪A native seed mix would be applied to disturbed areas.

▪Photos would be taken at pre designated areas near Foot of the Trail reservoir and Dennis Cabin waterhole, located within the Orejana Rim WSA, to determine the vegetation trends prior to performing maintenance. According to the Decision Record for EA/FONSI OR-81-71, if a decline in vegetation condition (not related to climate) is indicated thru yearly observation of these studies, the grazing system and/or intensity of use will be modified as necessary to improve vegetative condition.
▪Water developments recommended for maintenance would be presented to the multi-resource staff prior to ground disturbance. Areas not previously surveyed for botanical, archeological, special status species or weeds, may require a survey prior to maintenance activities. Modifications and mitigating measures may be necessary depending on the results of these surveys, and will be developed prior to ground disturbing activities. An Impairment Analysis would be completed for each project prior to construction. See Appendix B: Impairment Analysis Worksheet.

Also refer to Appendix A: Best Management Practices (BMPs).

CHAPTER 3 - AFFECTED ENVIRONMENT

AIR QUALITY
Air quality is excellent throughout the WSAs. Dust particulate caused by high winds occur during dry conditions occurs at various times of the year.

SOILS
Soils are semiarid, young, and poorly developed. Most of the areas are comprised of volcanics that weather to clay. Chemical and biological soils development and soil recovery processes are slow.

HYDROLOGY AND WATER QUALITY
There are several types of water sources in the WSAs, including perennial springs, playas, and intermittent and ephemeral streams and creeks. There are several perennial springs located in the Abert Rim and Fish Creek Rim WSAs. There are also waterhole developments at playas where the confining layer in these low-lying areas allows surface water to collect. The intermittent and ephemeral streams and creeks are losing reach systems with sources of snow melt and water run-off.

Most spring sources are excluded from livestock and wild horse use and water quality is expected to be similar to background conditions in these exclosures. Waterholes and reservoirs may contain high salt and silt loads

PALEONTOLOGICAL, CULTURAL AND ARCHEOLOGICAL RESOURCES
Some of the projects were surveyed for archeological and paleontological resources prior to construction. The remaining projects would be surveyed prior to maintenance. Many of the WSAs have significant historical and archeological resources.

VISUAL RESOURCES
WSAs are considered Visual Resource Management (VRM) Class 1. The objective for this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; it does not preclude limited management activity. The level of change to the

characteristic landscape should be very low and must not attract attention. As described in the Oregon Wilderness FEIS, most of the unnatural features described in each WSA are small or difficult to locate, and livestock developments are scattered and do not have a significant impact on each WSA as a whole.

VEGETATION

The following special status plants occur within the WSAs being analyzed:

Bureau Sensitive plants: Crosby's buckwheat *(Eriogonum crosbyea)* one population; Prostrate buckwheat *(Eriogonum prociduum)* one population. Bureau Tracking Species: Dwarf lousewort *(Pedicularis centranthera)* 3 populations; Lemmon's onion *(Allium lemmonii)* one population; thickstemmed cabbage *(Caulanthus crassicaules)* one population; fourwinged milkvetch *(Astragalus tetrapterus)* one population, and nodding melic grass *(Melica stricta)* one population.

▪The vegetation in the Devils Garden WSA consists generally of ponderosa pine, western juniper, and big sagebrush/bunchgrass communities. Other trees and shrubs include mountain mahogany, quaking aspen, bitterbrush, wax currant, desert-sweet, rabbitbrushes and gland ocean-spray.

▪Vegetation in Squaw Ridge WSA consists of western juniper/big sagebrush/bunch grass vegetative communities. Mountain Mahogany and juniper are the main tree species. Isolated pines and quaking aspen occur on the north end of the flow. Shrubs consist of big sagebrush, bitterbrush, wax currant, desert-sweet, rabbitbrush and ocean-spray. Bunchgrasses include bluebunch wheatgrass, Thurber's needlegrass, bottlebrush squirreltail, prairie junegrass, Indian ricegrass and other common native species. The WSA is located in an ecotone between the sagebrush steppe and ponderosa pine forest and thus contains an assemblage of plants found in both ecosystems

▪Vegetation on the west side of the Diablo WSA is typical salt desert shrub. Vegetation in the uplands is influenced by alkaline soils blowing off of Summer Lake. Salt desert shrub communities are interspersed with sagebrush/ bunch grass communities. Noxious weeds have been found in the area, mainly in the area burned by the Sharptop Fire. These species include musk thistle and Mediterranean sage. Cheatgrass has also invaded the area.

▪Vegetation in the northern half of the Orejana WSA consists of intermingled communities of low sagebrush and Sandbergs bluegrass with big sagebrush and Sandbergs bluegrass. The southern half consists mainly of big sagebrush communities. The western slope of Orejana Canyon support nearly pristine stands of native bunch grass.

▪There is a wide variety of vegetation in the Abert Rim WSA. Salt desert shrub communities occur near the shores of Lake Abert. Sagebrush/bunchgrass communities occur further up slope. Stringers of aspen, mountain mahogany and juniper occur through the northern half as well as numerous low sagebrush communities. About 600 acres of old growth ponderosa pine are present in the Colvin Timbers area. Mediterranean sage, a noxious weed has invaded much of the area, and is being spread by vehicle traffic and prevailing winds along Highway 395. Cheatgrass is also a problem. Repeated fires in the area have aided in spreading these species.

▪The southern end of the Fish Creek Rim WSA is mainly low sagebrush communities. The rim itself is a juniper/big sagebrush community. The northern part of the WSA is characterized by numerous stringers of aspen, juniper and mountain mahogany thickets. Isolated ponderosa

pine and white fir are associated with aspen stands. A proposed RNA includes portions of the mountain mahogany community, the low sagebrush/ Sandbergs bluegrass, and the low sagebrush/ Idaho fescue communities.

▪The vegetation in the Spaulding, Hawk Mountain, Sage Hen Hills and Basque Hills is predominately sagebrush/ grassland communities. Primary species include the following: big sagebrush, low sagebrush, bluebunch wheatgrass, Indian ricegrass, Thurber's needlegrass, needle and thread grass, bottlebrush squirreltail, and basin wildrye. Salt desert shrub communities, occur in the north and east portions of the area and include shadscale, greasewood and inland saltgrass. Noxious weed species including Canada thistle, scotch thistle, bull thistle, field bindweed, Mediterranean sage, halogeton, and hoary cress are known to occur in the area. Inventory and treatment of noxious weeds is ongoing.

LIVESTOCK GRAZING

▪Devils Garden WSA: The Devils Garden Allotment Number 907 is entirely within the WSA and is used on an emergency basis only. The season for emergency use is between April 15 and September 30. Portions of five other grazing allotments are used for periods of 5 to 8 months from April to December 15.

▪Portions of five grazing allotments are within the Squaw Ridge Lava Bed WSA, totaling 1175 AUMs, are used for periods of 5-8 months during March1 through December 15.

▪The Diablo WSA provides 588 AUMs of livestock forage in portions of six grazing allotments, for periods of 2 to five months during March 1 through December 30.

▪Portions of three grazing allotments within the Orejana WSA, totaling 777 AUMs, are used for periods of 3 to 8 months during February 1 through October 31st.

▪Portions of five grazing allotments within the Abert Rim WSA, totaling 708 AUMs, are used for periods of 6 months to yearlong.

▪Portions of six grazing allotments within the Fish Creek Rim WSA, totaling 778 AUMs are used for periods of two months to yearlong.

▪Spaulding, Hawk Mountain, Sage Hen Hills and Basque Hills WSAs are all within the Beatys Butte grazing allotment. A total of 26,121 AUMs are used on the allotment from April 1 through December 15. Approximate AUMs in the WSAs include: Spaulding - 3580 AUMs, Hawk Mountain - 3994 AUMs, Sage Hen Hills - 485 AUMs and Basque Hills - 3580 AUMs. The complete grazing system for the allotment is described and analyzed in the Beaty Butte Allotment Management Plan FEIS, 1998.

WILD HORSES

Wild Horses are present in two Herd Management Areas (HMAs) within the resource area. The Paisley Desert HMA is managed for 60 -110 horses. Part of the HMA is located within the boundaries of the Diablo WSA. An inventory in July 2002 found 172 horses in and near the Paisley HMA. Portions of the Beaty Butte Herd Management Area (HMA) are located in the Spaulding, Hawk Mountain, Sage Hen Hills and Basque Hills WSAs. The Beaty Butte HMA is managed for 100-250 horses. An inventory during July of 2002 found approximately 332 horses in and adjacent to the HMA. Gathering to reduce the herds within management numbers is expected to be completed as soon as funding is available. The minimum number of horses will remain inside the HMAs.

WILDLIFE

The 10 WSAs containing water sources in need of maintenance exhibit quite a diversity of wildlife species and their habitats. The project area provides forage, water, and cover for summering mule deer and pronghorn antelope. Some of the WSAs provide winter range habitat that the animals use during the critical time of the season. A few of the WSAs provide year-round habitat for expanding populations of elk, mainly in the northwestern portion of the Lakeview Resource Area.

California bighorn sheep, a bureau sensitive species, have been re-introduced or expanded their range into most of the WSAs. The WSAs provide food, cover, and water, the later being extremely limited within the WSAs. The five WSAs lie within the northern range of the kit fox, a bureau sensitive species, in Oregon. No kit fox have been documented within the Lakeview Resource Area; however, potential habitat does exist.

Other mammals observed in the project area are jackrabbits, cottontails, pygmy rabbits, coyotes, ground squirrels, chipmunks, marmots, bobcats, mountain lions, badgers, bats, and other common shrub-steppe mammal species. In some areas porcupines and bears have been seen.

Sage grouse, another bureau sensitive species, use most of the WSAs at least some time of the year for nesting, brood rearing, wintering, or just passing through to adjacent habitats. Other sensitive bird species such as Swainson's hawks, ferruginous hawks, golden eagles, and bald eagles have also been observed in most of the WSAs at different times of the year. Peregrine falcons have been observed in some of these areas due to releases from the Crump and Summer Lake hack sites; however, no nesting has been documented within the Lakeview Resource Area.

Other bird species observed in the project area are great horned owls, barn owls, short-eared owls, burrowing owls, prairie falcons, kestrels, goshawks, chukars, quail, ravens, shrikes, woodpeckers, waterfowl and shorebirds, and many other common shrub – steppe bird species.

There are also numerous amphibian and reptile species that occur within the project area including fence lizards, sagebrush lizards, gopher snakes, rattlesnakes, horned – lizards, and many other common shrub – steppe species.

RESEARCH NATURAL AREAS /AREAS OF CRITICAL ENVIRONMENTAL CONCERN (RNA/ACECS)
Hawksie-Walksie RNA/WSA is proposed for part of the Hawk Mountain WSA and part of the Sage Hen WSA. Hawksie-Walksie is recommended for ACEC/RNA status for botanical, ecological and anthropological values. Fish Creek Rim RNA/WSA is proposed for part of the Fish Creek Rim WSA. Fish Creek Rim is recommended for ACEC/RNA status for botanical, ecological and anthropological values. Lake Abert ACEC is already established and the new proposal will increase the original boundaries to include the entire WSA. The ACEC values for Lake Abert are aquatic ecology, visual, wildlife, cultural, and botanical. Basque Hills ACEC/RNA already exists and is included in the management by Burns District; it was designated because of exceptional botanical values. Devils Garden Lava Bed ACEC has been designated in previous land use plans for unique lava flow formations and forest to desert transition zones.

WSA DESCRIPTIONS AND PROJECT LOCATIONS
Complete descriptions can be found in the 1989 Oregon Wilderness Environmental Impact Statement.

Devils Garden Wilderness Study Area (OR-1-12)
The Devils Garden Lava Bed WSA is located in Lake County; about 60 miles southeast of Bend, Oregon and 8 miles north of the small town of Fort Rock. The Devils Garden WSA has high wilderness values, is generally free of human activity, and appears to have been affected primarily by the forces of nature. The area possesses outstanding opportunities for solitude because of its large size and rugged topographic features and vegetative screening. Outstanding opportunities for primitive recreation include hiking, hunting, photography, spelunking (cave exploring), sightseeing, and nature study. The extent and diversity of volcanic features, plant communities, ecological interrelationships and recreation opportunities offer a unique matrix of wilderness values.

Unnatural features influence less that 1 percent of the WSA. There is a 2 mile road to a homestead in the Devils Garden, a homestead site with two old houses, a well and associated corral, and approximately 1,000 acres seeded with crested wheat. There are two existing big-game guzzlers and one bird guzzler in the area, which visually affect less than 20 acres total. Temporary water hauling is expected to be the main method of watering livestock in this WSA.

Project Name	Project Number	Legal Description	Year Constructed
Devils Garden Well	705828	T. 24 S., R.15 E., Sec. 16:SW¼SW¼	1973

Squaw Ridge Lava Bed Wilderness Study Area (OR-1-3)
The Squaw Ridge Lava Bed WSA is located approximately 80 miles southeast of Bend and 26 miles from State Highway 31 in Lake County, Oregon, and approximately 12 miles northeast of the town of Fort Rock. Squaw Ridge WSA is roughly circular in shape, is dominated by an extremely rugged basalt flow, which issues from what is now called Lava Butte, and forms a flattened cone covering approximately two-thirds of the study area. Elevation ranges from 4,300 feet to 5,585 feet at the summit of Lava Butte near the center of the WSA. The WSA appears to be predominantly natural with negligible human imprints. This natural character is emphasized by abundant native vegetation throughout the WSA and by undisturbed lava features. The WSA is known for its variety of volcanic features, including sharp and convoluted "aa" lava, flat-featured and smooth-surfaced pahoehoe lava, collapses, tumuli (fractured basaltic domes), cinder cones, squeeze-ups (lava forced through fissures), spires, and ropy lavas.

The opportunities for solitude are outstanding in the entire WSA, which includes the area recommended for wilderness designation. The opportunities for primitive and unconfined recreation such as day hiking, backpacking, tent camping, sightseeing, photography, caving, and exploring the lava features are outstanding throughout the WSA.

Unnatural features in the WSA are minimal in size and impact, and are scattered through the lands not covered by lava, affecting less than two percent of the WSA. They include five small reservoirs or waterholes, 7.5 miles of pasture fence, 15.5 miles of vehicle ways and a 425 acre seeding in the southeast corner of the WSA. The heavy

cover of juniper and shrubs and the scattered low hills make the developments unnoticeable in the area as a whole.

Squaw Ridge WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Steigleder Reservoir	700707	T. 25 S., R. 16 E., Sec. 10: SW¼NE¼	1958	250x60x5
South Reservoir	700653	T. 24 S., R. 16 E., Sec 3: SE¼NE¼	1958	108x36x5
Porter Reservoir	700654	T. 24 S., R. 16 E., Sec. 1: NW¼SW¼	1958	120x40x6
Adam Waterhole	701347	T. 24 S., R. 17 E., Sec. 5: SW¼NE¼	1948	125x35x5
Monday Waterhole	701345	T. 24 S., R. 17 E., Sec. 8: SE¼NW¼	1946	130x35x4

Diablo Mountain WSA (OR-1-58)

The Diablo Mountain WSA is located in Lake County, Oregon approximately 110 miles southeast of Bend, Oregon. The south end of the WSA is 5 miles northwest of the small town of Paisley, Oregon. The Diablo Mountain WSA is in essentially a natural condition. It is characterized by several long north-to-south ridges, rising in elevation to the summit ridge of Diablo Mountain on the east side, where the steep scarp of Diablo drops some 1,500 to 2,000 feet. The western half of the WSA has low, rolling terrain and salt flats on the playa adjacent to Summer Lake. The area contains a unique combination of ecosystems (Intermountain Sagebrush Province/Sagebrush Steppe and Saltbrush-greasewood). At present, there are no similar wilderness areas containing both of these ecosystems.

Wilderness values within this WSA include outstanding opportunities for solitude, primitive and unconfined recreation (hiking, wildlife observation), and the preservation of habitat for wildlife. Unnatural features influence less than 1000 acres. The most noticeable features are the earthwork mounds of seven livestock waterholes located in widely separated lakebeds in the east half of the WSA. Five miles of fenceline has also been constructed. The developments are substantially unnoticeable in the WSA as a whole, and the topography screens them from view outside of their immediate location.

Diablo Mountain WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Wildcat Waterhole	704017	T. 31 S., R. 19 E., Sec. 35: NE¼NW¼	1964	280x100x10
Between Rim Waterhole	704024	T. 31 S., R. 19 E., Sec. 21: NW¼SW¼	1964	280x100x10
Intermountain Waterhole	704469	T. 31 S., R. 19 E., Sec. 28: SW¼NE¼	1963	280x100x10

Diablo Mountain WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Giant Waterhole	704093	T. 32 S., R. 19 E., Sec. 10: NW¼NW¼	1964	280x100x12
Yankee Waterhole	704085	T. 32 S., R. 19 E., Sec. 11: NW¼SE¼	1964	280x100x10
Loco Lake = Ten Mile Waterhole	704180	T. 32 S., R. 18 E., Sec. 3: NE¼NE¼	1971	200x100x12
Bailey Waterhole	704128	T. 31 S., R., 18 E., Sec. 25: NE¼NE¼	1963	280x100x10

Orejana Canyon WSA (OR-1-78)

The Orejana Canyon WSA is located in Harney County, Oregon, 30 miles northeast of the small town of Plush, Oregon. U.S. Highway 395 is located 35 miles to the west of the WSA, and Oregon State Highway 140 is approximately 40 miles to the south. The WSA is characterized by the 500-foot-high Orejana Rim and the 8.5-mile-long Orejana Canyon, which runs most of the length of the WSA from north to south. Overall, the WSA appears to be generally natural. Orejana Canyon and the Island are predominantly natural. Orejana Rim is an example of the distinctive basin and range topography of southeastern Oregon. It contains exceptional geologic and paleontological features such as unique obsidian flows and fossil remains. There are eleven reservoirs and waterholes in the WSA, many of which are unnoticeable as a whole. Unnatural features are visible from approximately two percent of the WSA.

One of the 11 waterholes/reservoirs, Foot of the Trail Reservoir was constructed in 1982 (EA OR-010-81-71) after FLPMA. The Decision Record states that photo points would be established within ¼ mile of the Foot of the Trail reservoir and at Dennis Cabin waterhole (constructed pre-FLPMA) site to monitor vegetation trend. Photos exist in the Wilderness file for 1982 and 1984. According to the Decision Record, if a decline in vegetation condition (not related to climate) is indicated thru yearly observation of these studies, the grazing system and/or intensity of use will be modified as necessary to improve vegetative condition.

There are outstanding opportunities for primitive and unconfined recreation in the WSA. Opportunities for solitude are available in the Orejana Canyon and on the island between Orejana Rim and the canyon. The face of Orejana Rim offers several unique opportunities for sightseeing (obsidian flows and paleontological features) and hiking. Primitive recreation including hiking, photography and nature study is best in the canyon and along the rim.

Orejana Canyon WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Terry Spring Waterhole	700874	T. 31 S., R. 28 E., Sec. 5: SW¼SW¼	1948	100x50x5 (estimate)
Shingle Waterhole	701292	T.32S., R.28E., Sec.5: NW¼NE¼	1967	100x150x12
Headwater Waterhole	701294	T. 31 S., R. 28 E., Sec.18: SW¼NE¼	1967	200x100x8
Orijana Waterhole	700156	T. 30 S., R. 27 E., Sec. 25: NE¼SW¼	1967	150x75x6
Orijana Basin Waterhole	700177	T. 30 S., R. 27 E., Sec. 35: NW¼NE¼	1944	120x80x5
Hartman Waterhole	701344	T. 30 S., R. 28 E., Sec. 31: NW¼NW¼	1968	150x100x5 (estimate)
Open Draw Reservoir	701466	T. 30 S., R. 27 E., Sec. 27: SE¼NE¼	1947	100x80x8
Search Reservoir	701477	T. 31 S., R. 27 E., Sec. 12: NW¼SW¼	1948	100x50x5
Cabin Reservoir	704281	T. 30 S., R. 28 E., Sec. 19: SW¼NW¼	1942	280x100x6
Foot-of-Trail Reservoir	705136	T. 31 S., R. 27 E., Sec. 1: SW¼NW¼	1982	190x70x4
Duane Spring Waterhole	700875	T. 30 S., R. 28 E., Sec. 31: NW¼SE¼	1948	50x15x5

Abert Rim WSA

Abert Rim WSA (OR-1-101) The Abert Rim WSA is located 26 miles north of Lakeview and 3 miles northeast of Valley Falls, Oregon. The Abert Rim WSA offers one of the most spectacular geologic sightseeing views in eastern Oregon. It rises 2,000 vertical feet above Lake Abert. It is one of the largest exposed fault scarps in North America and is a major attraction in this region of the State. The study area appears to be in a generally natural condition and is primarily affected by the forces of nature.

Opportunities for solitude are outstanding in the WSA, especially in the southern half, both on the rim and along portions of the scarp. There are excellent opportunities for primitive and unconfined recreation including hiking, backpacking, hunting, camping, sightseeing, photography, wildlife observation, and horseback riding.

Unnatural features influence less than 8 percent of the WSA. They include 15 small waterholes and/or reservoirs, six wildlife guzzlers

and three spring developments. Livestock developments are scattered and do not have a significant impact on the area as a whole.

Abert Rim WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Juniper Waterhole	700213	T. 35 s., R. 21 E., Sec. 14 SE¼SE¼	1941	100x75x5 (estimate)
Abert Waterhole	701074	T. 34 S., R. 22 E., Sec. 7 SE¼NE¼	1948	70x30x3
Shells Waterhole	701083	T. 34 S., R. 22 E., Sec. 19 E: SW¼SE¼	1954	100x25x6
Miocene Reservoir	701118	T. 35 S., R. 21 E., Sec. 13: NW¼SE¼	1947	200x30x5
Spawn Reservoir	701122	T. 35 S., R. 21 E., Sec. 24: NE¼SE¼	1946	200x30x5
Halftime Reservoir	701130	T. 35 S. R. 22 E., Sec. 17: SW¼SE¼	1948	100x30x5
Stiff Reservoir	701481	T. 34 S., R. 22 E., Sec. 19 SW¼NE¼	1947	100x40x3
Civil Reservoir	701488	T.34 S., R. 22 E., Sec. 29: SE¼SE¼	1947	150x30x5
Blast Reservoir	701492	T. 35 S., R. 22E., Sec. 18: NW¼SE¼	1948	140x30x5
Brick Reservoir	701495	T. 35 S., R. 21 E., Sec., 23: NW¼NE¼	1968	100x50x5 (estimate)
Shad Reservoir	701496	T. 35 S., R. 21 E., Sec. 13 NE¼SW¼	1948	100x30x5
Shrew Reservoir	701497	T. 35 S., R. 21 E., Sec 23 SE¼NE¼	1948	100x50x5 (estimate)
Fish Creek Reservoir	705667	T. 35 S., R. 21 E., Sec 13 NE¼NW¼	1948	60x30x4
Badger Reservoir	701498	T. 35 S., R. 21 E., Sec. 23 SE¼SW¼	1948	90x25x4
Shellhammer	704524	T. 36 S., R. 21 E., Sec. 11 NE¼SE¼	1974	90x75x4 (estimate)

Fish Creek Rim WSA (OR-1-117)

The Fish Creek Rim WSA is located immediately north of Adel, Oregon and approximately 30 miles east of Lakeview, Oregon. The Fish Creek Rim WSA is in an essentially natural condition and has been primarily influenced by the forces of nature. The primary feature of the WSA is the east-facing scarp of Fish Creek Rim, which rises 1,500 to 2,000 feet above the Warner Valley. Fish Creek Rim is part of a series of steep fault block scarps which form the basin and range topography of much of southeastern Oregon. Approximately 1,000 acres of a proposed 1,280-acre Research Natural Area (RNA) lies within this WSA.

Opportunities for solitude are outstanding within most of the WSA, particularly in the wooded areas containing mountain mahogany or juniper below the rim. Primitive recreational opportunities are outstanding. Hiking terrain varies from easy to extremely rugged on the east-facing scarp, and there are many good camping areas located above the rim. There are excellent opportunities for antelope and mule deer hunting, or observation and photography of mammals, birds, plants, geologic formations, and rock art. Sightseeing from the rim is spectacular.

Unnatural features which affect approximately two percent of the total WSA include 22 small waterholes and reservoirs, six miles of ways, 4 miles of fence, one mile of powerline and two small TV antennae. All disturbances to naturalness are extremely localized.

One waterhole, "Deerfly" was constructed post FLPMA (1983). The FONSI states that there are no impacts to wilderness study areas. The EA OR-83-35 states that the addition of Deerfly and the maintenance of "Duke" should help spread the livestock use over more of the pasture, thus keeping the area in a more natural condition by helping to reduce overgrazing.

Fish Creek Rim WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Sheep Bell Waterhole	700975	T. 38 S., R. 24 E., Sec.7: NE¼NE¼	1947	100x50x5 (estimate)
Brunch Reservoir	700969	T. 39 S. R. 23 E., Sec. 2: SE¼SE¼	1966	130x100x5
SOB Rock Reservoir	701111	T. 39 S., R. 23 E., Sec. 13: NE¼NE¼	1966	100x50x5
Sweeny Reservoir	700857	T. 39 S., R. 23 E., Sec. 1 SE¼SW¼	1960	200x180x9
Smokey Reservoir	700962	T. 39 S., R. 24 E., Sec. 6: SE¼NE¼	1966	240x40x5
Cochiece Reservoir	700964	T. 38 S., R. 24 E., Sec. 31: SE¼SW¼	1967	150x100x5 (estimate)
Boulder Waterhole	700965	T. 38 S., R. 24 E., Sec. 29:	1961	80x60x4

Fish Creek Rim WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Duke Reservoir	700971	T. 39 S., R. 23 E., Sec 1 SW¼NW¼	1967	100x90x3
Derringer Waterhole	700974	T. 39 S., R., 23 E., Sec. 1 SE¼SW¼	1966	100x80x5 (estimate)
Poncho Waterhole	700976	T. 39 S., R. 24 E., Sec. 18 SW¼NW¼	1966	200x50x10
Noon Reservoir	700977	T. 39 S., R. 23 E., Sec. 1 SE¼NE¼	1967	100x60x4 (estimate)
Split Reservoir	700978	T. 39 S., R. 23 E., Sec. 12 SE¼SE¼	1966	75x36x4
Winchester Reservoir	700980	T. 39. S., R. 24 E., Sec. 18: NW¼NE¼	1966	250x24x6
Graham Cracker Reservoir	700982	T. 39 S., R. 23 E., Sec. 12: NE¼NE¼	1966	160x50x10
Blue Waterhole	701051	T. 38 S., R. 23 E., Sec. 36:SW¼NE¼	1966	150x50x8
Rim Reservoir	701115	T. 39 S., R. 24 E., Sec. 8: NW¼NW¼	1966	90x75x5 (estimate)
Indian Bowl Reservoir	705349	T. 39 S., R. 24 E., Sec. 6: NW¼NW¼	Unknown recorded 1983	120x100x4
White Rock Reservoir	700852	T. 39 S., R. 23 E., Sec. 10: NE¼NE¼	1960	100x55x4
Flood Reservoir	705641	T. 39 S., R. 23 E., Sec. 2: SW¼SW¼	1972	100x75x5 (estimate)
Deerfly Waterhole	705398	T. 39 S., R. 23 E., Sec. 10: NE¼SW¼	1983	100x75x5 (estimate)

Spaulding WSA (OR-1-139)

The Spaulding WSA is located 18 miles east of Adel, Oregon, in both Lake and Harney Counties. The WSA is in a predominately natural condition and primarily affected by the forces of nature. Evidence of recent human activity is extremely isolated and unobtrusive when considering the area as a whole. Because of the large size and remote location of the Spaulding WSA, outstanding opportunities for solitude exist over most of the area. Primitive recreation opportunities are outstanding for day hiking, backpacking, camping, nature study, photography, hunting, horseback riding and general sightseeing in most of the WSA. Primitive hunting and backpacking opportunities excel.

Three of the 11 waterhole sites were constructed post FLPMA. Larkspur and Wagonslide construction were addressed in EA-OR-010-79-04. Bench Top Waterhole #2 construction was addressed in EA-OR-010-78-43. The EAs state that the mitigating measures proposed in EA-010-8-5 will become part of the proposed action. All construction and maintenance work will be done in a manner so as not to impair the suitability of these areas. No additional road upgrading or road construction will be done. Surface disturbance will be held to a minimum and confined to the actual reservoir or waterhole site.

Spaulding WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Wonder Waterhole	701033	T. 38 S., R. 28 E., Section 27: NE¼NE¼	1961	150x100x11
Slide Waterhole	704745	T. 41 S., R. 28 R., Section 7: NE¼SW¼	1975	150x100x12
High Lake Waterhole	704748	T. 40 S., R. 28 E., Sec. 33: SW¼NW¼	1975	175x100x12
Wagonslide Waterhole	704749	T. 40 S., R., 28 E., Sec. 10: NW¼SW¼	1975	150x100x8
Weed Lake East Waterhole	704750	T. 39 S., R. 28 E., Sec. 35: NE¼SW¼	1975	150x100x12
Sage Hen Butte Waterhole	704756	T. 40 S., R. 28 E., Sec. 22: NW¼NW¼	1975	150x75x8
Bench Top Waterhole 2	704921	T. 39 S., R. 29 E., Section 16: NW¼SE¼	1979	150x100x9
Wagonslide Waterhole 2	705029	T. 39 S., R. 28 E., Section 28: NE¼SW¼	1979	145x70x9
Larkspur Waterhole	705030	T. 39 S., R. 28 E., Sec. 9: SW¼NE¼	1980	150x75x8
Ladybug Waterhole	705768	T. 39 S., R. 29 E., Sec. 4: NE¼SW¼	1961	150x100x10 (estimate)
Sage Butte Waterhole	700480	T. 41 S., R. 28 E., Sec. 5 : SW¼SW¼	1954	75X50X8 (estimate)

Hawk Mountain WSA (OR-1-146A)

The Hawk Mountain WSA is located in southern Harney County, approximately 73 miles east of Lakeview, Oregon. The WSA is in a very natural condition and appears primarily affected by the forces of nature. Approximately 300 acres of the 440-acre Long Draw Research Natural Areas

(RNA) lie within the WSA. The RNA was established to protect an excellent Indian ricegrass/ Thurber's needlegrass community.
Opportunities for solitude are outstanding throughout the study area. The north, northeast and eastern portions of the WSA have mountainous terrain with draws, valleys, ridges and canyons among which a person can easily find isolation. There are outstanding opportunities for a wide range of primitive recreation activities including day hiking, backpacking, horseback riding, hunting and camping.

Unnatural features include five waterholes, two concrete water storage tanks, 6 miles of fence and twenty five miles of ways. These features influence approximately 1.5 percent of the study area. Two waterholes are screened by vegetation. Three waterholes are in the open area central to the WSA and are visible from the surrounding hills.

Hawk Mountain WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Rastus Waterhole	701071	T. 40 S., R. 28 E., Sec	1948	100x80x9
Hawksie Walksie	704761	T. 41 S., R. 31 E., Sec. 7: NW¼SW¼	1976 (August)	175x100x12
South Hawksie Waterhole	704760	T. 41 S., R. 31 E., Sec 19:NE¼NE¼	1976 (August)	150x100x12

Sage Hen Hills WSA (OR-1-146B)

The Sage Hen Hills WSA is located in southwestern Harney County, Oregon, approximately 73 miles east of Lakeview, Oregon. The WSA is in a natural condition and is primarily affected by the forces of nature. The WSA is characterized by low, rolling sagebrush hills with moderate topographic relief.

Opportunities for solitude within the WSA are not considered outstanding because of the moderate topographic relief and low vegetative cover of most of the area. Outstanding primitive recreation opportunities for backpacking, day hiking, horseback riding, camping and wildlife observation exist only if the 8,520-acre WSA is considered in conjunction with the adjacent refuge land. There is one unnatural feature, a small reservoir near the northeast boundary road.

Sage Hen Hills WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Stallion Waterhole	704759	T. 41 S., R. 30 E., Sec.15:SW¼SW¼	1976	100x50x6

Basque Hills WSA (OR-2-84)

The Basque Hills WSA comprises 141,410 acres of which 68,589 acres are in the Lakeview Resource Area. The Basque Hills is relatively natural, high desert country with some foothills and rimrock. Overall water developments total only 1% of the area and can only be viewed within the vicinity of each development. Opportunities for solitude are outstanding and are enhanced by the areas large size and the topographic screening provided by rolling hills. The area does not provide any outstanding opportunities for primitive form of recreation. Opportunities for day hiking, backpacking, hunting and sightseeing are only of moderate or low quality due to lack of topographic features, vegetative diversity and availability of water. Three special features add to value of this area as wilderness: a newly discovered plant species in the northwest portion of the WSA: raptor nesting concentrated in areas along rims and potential kit fox habitat.

Basque Hills WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Three Lakes	704303	T. 36 S., R. 30 E., Section 24 :SW¼SE¼	1970	150x75x4
Shallow Lake 6	704912	T. 36 S., R. 31 E., Section 30: SW¼NW¼	1978	160x100x8
Shallow Lake 5	704913	T. 37 S., R. 30 E., Section 34 NE¼NE¼	1978	150x100x8
Benchtop	704304	T. 37 S., R. 30 E., Section 3: NW¼NW¼	1970	150x75x14
Surveyor's Lake	70438	T. 37 S., R. 30 E., Section 15: SE¼W¼	1952	160x100x11
Ernies Waterhole	#700803	T. 37 S., R. 30 E., Section 7: SE¼SW¼	1958	100x80x8
Shallow Lake 4	#704914	T. 38 S., R., 30 E., Section 12 : SE¼NW ¼	1979	130x75x8
Shallow Lake 3	#704915	T. 38 S., R. 31 E., Section 30: SW¼NE¼	1979	160x100x9
Shallow Lake 2	#704916	T. 38 S., R. 31 E., Section 32:SE¼NW¼	1978	150x100x8
Shallow Lake 1	#704917	T. 39 S., R. 31 E., Section 17:NE¼NW¼NW¼	1979	150x100x10
Red Waterhole	#700807	T. 39 S., R. 31 E., Section 28: SE¼NW¼	1958	100x80x8
Blue Dog Waterhole	#704302	T. 37 S., R. 30 E., Section 1: SW¼SE¼	1970	200x70x10
Rim Rock Waterhole	#700422	T. 36 S., R. 30 E., Section 31: NE¼SW¼	1952	110x70x10

Basque Hills WSA Project Name	Project Number	Legal Description	Year Constructed	Dimensions (length x width x depth in feet)
Horn Waterhole	#701076	T. 40 S., R. 31 E., Section 5: SW¼SW¼	1950	120x80x8

CHAPTER 4 - ENVIRONMENTAL CONSEQUENCES
Summary of Alternative Impacts

ENVIRONMENTAL IMPACTS: The potential environmental impacts resulting from the alternatives relative to the following critical resource values were evaluated. The following is a summary of the results:

Critical Element/ Resource Value	Significantly Affected Yes	No	Critical Element/ Resource Value	Significantly Affected Yes	No
Air Quality		X	T & E Species		X
ACEC/RNAs		X	Wilderness		X
Cultural Resources		X	Wild & Scenic Rivers		X
Farmlands, Prime/Unique		X	Hazardous Wastes		X
Low Income/ Minority Populations		X	Water Quality		X
Floodplains		X	Wetlands/Riparian Zones		X
Native American Cultural/ Religious Concerns		X	Noxious Weeds		X

AIR QUALITY

Neither the No Action nor the Preferred Action Alternative would have significant impacts to the good air quality throughout the LRA. Under the proposed action, dust particulates may increase from driving on existing roads and equipment use, the increased dust particulates would be no greater than or distinguishable from a normal dust occurrence.

SOILS

Alternative A- No Action

The no action alternative would prevent possible soil compaction and erosion at non-functioning waterholes and reservoirs due to decreased grazing pressure in these areas. Soil compaction and erosion at currently functioning waterholes would increase from the additional grazing pressure at these sites.

Alternative B- Proposed Action

The proposed action would disperse grazing influences on compaction and erosion throughout the WSAs reducing the overall impact to any one site.

HYDROLOGY AND WATER QUALITY IMPACTS

Alternative A- No Action

No action would result in natural processes taking over the system. As the system proceeds toward equilibrium, the waterholes and reservoirs would fill with silt. Precipitation events that cause surface water flow would also cause the waterholes and reservoirs to fill with silt. The streams and creeks would flow through the entire span of their losing reach, infiltrating the soil and flowing subsurface.

No action would reduce the water holding storage capacity and the time period that water could be held at the project site. Water would be dispersed across the lakebed at shallow depths subject to a higher evaporation rate.

Alternative B- Proposed Action

Water from snow melt and water runoff would be held in the area for a longer period of time. In-channel reservoirs would create water impoundments to collect some of the water in the system before it could flow to the full length of the losing reach. This decreases the amount of water that may infiltrate into the soil and subsurface flow. Water holding capacity available for animals at each site would be increased. Water holding capacity of the plant systems is expected to be maintained, but will be variable depending on the degree of grazing intensity by livestock, wild horses and wildlife, timing of use, period of time between grazing treatments, and climatic conditions.

CULTURAL, PALEONTOLOGICAL AND ARCHEOLOGICAL IMPACTS INCLUDING, TRADITIONAL USES AND NATIVE AMERICAN RELIGIOUS CONCERNS

All projects would be or have been surveyed for cultural archeological and paleontological resources. Management of cultural values is a priority once sites are identified. Mitigating measures may be necessary if resources are found and would be designed prior to project maintenance. All mitigation plans would be developed with appropriate Tribal groups and reviewed by the Oregon State Historic Preservations Office prior to implementation. Mitigating measures would be implemented on as needed basis; therefore, no impacts are expected from either the No Actions or Proposed Action Alternatives.

Mitigation would take one of the following forms:

1. Avoidance of impacts to site area.
2. Surface collection of artifacts
3. Subsurface testing and salvage of data contained within the deposits of the site.

VISUAL RESOURCES

Alternative A- No Action

No new disturbance would take place, which would meet the objectives of VRM Class 1. This alternative would not allow for corrections to existing projects that may assist in blending into the landscape.

Alternative B- Proposed Action

Maintenance would cause each water development to be more visible in the immediate area due to the removal of vegetation, soil exposure and berm piles. However, this would be a short term effect, as over time the soils would disperse, some vegetation would return, and the harder lines of the berms would soften.

WILDERNESS VALUES

Alternative A- No Action
The no action alternative would preserve the naturalness, solitude, primitive and unconfined recreation and most of the special features unique to each WSA. No additional surface disturbance would occur under this alternative; however, several of the water developments would retain a more prominent outline than desired, without further maintenance. Special features such as wildlife and wild horses may not be preserved if animals move outside WSAs for water. Some recreational opportunities such as photography and viewing of wildlife and wild horses may be lost or reduced. This alternative would continue to meet the non-impairment criteria, since no activity would take place.

Alternative B- Proposed Action
Opportunities for solitude would be restricted during the actual maintenance activities. Naturalness would also be affected in the short term until the berms become less apparent. Maintaining the water developments, which would enable them to hold water and thus continue their usefulness, would enhance wilderness characteristics by attracting wildlife and wild horses.

The proposed action would preserve and enhance the naturalness of the WSAs, by dispersing grazing animals including livestock, wild horses and wildlife through a larger area than Alternative A. A greater variety of livestock grazing strategies could be implemented to maintain or improve the health of vegetation. Recreational opportunities for photography and viewing of wildlife and wild horses would be retained. Hunting opportunities would be retained. Special geologic, plant, and archaeological features would be preserved. Special animal species dependant on water sources would be enhanced. Impacts to special geologic, plant and archeological features would be avoided.

VEGETATION

Alternative A- No Action
No impacts to vegetative composition are expected from this alternative. Overall vegetative communities would be preserved in the long term. In the long term, the area adjacent to water sources may have noticeable negative impacts to vegetation as animals concentrate on fewer water sources in the WSA. Vegetative impacts from grazing will increase outside WSAs as animals move outside the WSAs.

Habitat for Sensitive, Threatened and/or Endangered Plant Species would be maintained.

Alternative B- Proposed Action

Positive impacts to vegetation will occur as grazing animals are dispersed throughout a large area and utilization levels reduced accordingly. Each waterhole will receive some concentrations of grazing pressure. Maintaining horses at the recommended levels combined with livestock management will reduce any negative impacts. Vegetation would be disturbed in the short term on roads and ways, when equipment is taken to the project site and at the project site during maintenance.

Sensitive, Threatened and/or Endangered Plant Species would be preserved.
Mitigating measures designed in the proposed action are intended to reduce and prevent weed infestations.

LIVESTOCK GRAZING

Alternative A- No Action
Livestock grazing within WSAs would be limited by topography and water sources. In the short term no significant impact to livestock grazing is expected. In the long term as water sources decrease in number and size, livestock would congregate near or at the remaining water sources within WSAs. Livestock use would also be increased outside of WSAs and/or on more dependable waters sources such as springs. The opportunity to improve livestock grazing management would be low.

Alternative B-Proposed Action
The proposed action would benefit livestock grazing by providing a means to improve cattle distribution and livestock grazing management strategies while maintaining the current level of livestock grazing in each WSA. Improved livestock management would also result in improved vegetative health.

WILD HORSES

Alternative A - No Action
The no action alternative would have adverse impacts to wild horses in both HMAs. If water sources are not maintained, wild horses may face life threatening situations. In the long term the horses' range would be reduced as water sources become unavailable. The horses would then be forced to concentrate on fewer water sources in the HMAs. Wildcat waterhole is the most important to horses in the Paisley HMA. All the water developments in Spaulding, Hawk Mountain, Sage Hen Hills and Basque Hills are important to horses in the Beaty Butte HMA. Specifically in the Beaty Butte HMA, the horses would tend to concentrate at Fish Fin Rim when the Shallow Lakes waterholes are dry. When other water sources are dry, horses would concentrate at springs including South Corral Spring, Willow Spring, Buena Vista and others, the majority of which are on private land. Horses in the Paisley HMA tend to move outside the HMA into crested wheatgrass seedings. Additionally horses would be forced outside the HMAs onto surrounding land in the Burns District, the Sheldon and Hart Mountain National Wildlife Refuges or other BLM and private lands.

Alternative B- Proposed Action

Wild horses would benefit by the proposed action. Maintenance of existing water sources would provide wild horses with water necessary for their survival, and allow them to stay in their preferred territories. The proposed action would provide for horses to stay within the Beaty Butte and Paisley Desert HMAs.

WILDLIFE

Alternative A- No Action
Wildlife impacts will be similar to those of livestock and wild horses to a slightly lesser degree since wildlife usually can move further between water sources and have larger ranges. The No action alternative may result in loss of some animals during stress years. Overall wildlife habitat is expected to be maintained; however, some populations of animals would be forced to move outside of WSAs to survive.

Threatened, Endangered, and Sensitive Species including Special Status Species would be impacted the same as other wildlife species.

Alternative B- Proposed Action
Wildlife impacts would be similar to livestock and wild horses to a slightly lesser degree since wildlife usually can move farther between water sources and have larger ranges. The proposed action would maintain present wildlife use in the area. Loss of animals during stress periods such as drought would be reduced.

RESEARCH NATURAL AREAS / AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Alternative A-No Action
No action could impact the potential RNA/ACECs in the LRA. The majority of water sources recommended for maintenance are outside of RNA/ACECs. If they are not maintained, grazing animals will be forced to concentrate at other water sites, some of which are within the RNA/ACECs.

Alternative B- Proposed Action
The special and unique values present in the RNA/ACECs would be protected under the proposed action.

Cumulative, Long-term, Secondary and Indirect Impacts

Alternative A -No Action
Over time water sources would decrease in number and size through lack of maintenance. Livestock, wild horses and wildlife will concentrate at a few water sources throughout the resource area. The disturbed area adjacent to each water source will increase in size and intensity. Wildlife and wild horses will be forced onto adjacent BLM, private, state or other federal lands, increasing the intensity of grazing pressure on these lands.

Across a broad landscape, management activities occur on Hart Mountain and Sheldon National Wildlife Refuges, other BLM districts and private lands which could be considered to be cumulative including prescribed fire, livestock grazing, and fencing. Cumulative Impacts for the LRA would be the same as those described in the Beaty Butte AMP FEIS and are incorporated by reference (pages 75 and 76 and Tables 1-9).

Alternative B -Preferred Alternative
The existing water sources within WSAs would be maintained at the existing number projected in the Wilderness EIS. Grazing animals would be dispersed throughout the resource area. Livestock would be more easily managed. The disturbed area around each water site would be smaller in size.

Irreversible/Irretrievable Impacts
No irreversible or irretrievable impacts are expected from either the No Action or Proposed Action Alternatives.

LIST OF APPENDICES
1. Appendix A: Best Management Practices (BMPs)
2. Appendix B: Impairment Analysis Worksheet
3. WSA Maps and Project Locations

Appendix A: Best Management Practices

Waterhole and Reservoir Cleanouts and Repair (Maintenance) Within Wilderness Study Areas in the Lakeview Resource Area EA-OR-010-2002-2

Best Management Practices (BMPs)

- Use least impacting equipment for soil erosion and compaction.
- Only two visits to the site with heavy equipment allowed per year.
- The site access will be maintained, such that the way does not appear unusable/drivable by the public.
- Maintain at least 70% of the vegetative site potential with an upward trend in the drainage area.
- Maintain an appropriate tons/year erosion rate.
- Minimize in-channel work to maintain channel shape.
- Include engineers in the design of reservoirs greater than 9.25 acre-feet.
- Site visit by hydrologist before repair/maintenance of the waterhole or reservoir is implemented.

Appendix B: Impairment Analysis Worksheet

Proposed Action Analysis: Waterhole Maintenance*

Resource Area:

WSA Name/Number:

Project Name and Location:

Project Outline:

1) Date(s) of proposed action:
2) Size of disturbance (acreage, linear feet, miles, square feet, etc.):
3) Is the project considered a grandfathered right?
4) Was the project constructed after October 21, 1976 (post FLPMA)?:
5) Discuss how the actions outlined in the proposed action meet the requirement of being "substantially unnoticeable". **
6) Describe methods/equipment types used for proposed access/maintenance:
7) Are there practical alternatives to motorized access?
8) Have alternative locations outside the WSA been considered/ruled out?

Reviewed by:

_____ _____

Outdoor Recreation Planner/Wilderness Specialist Date

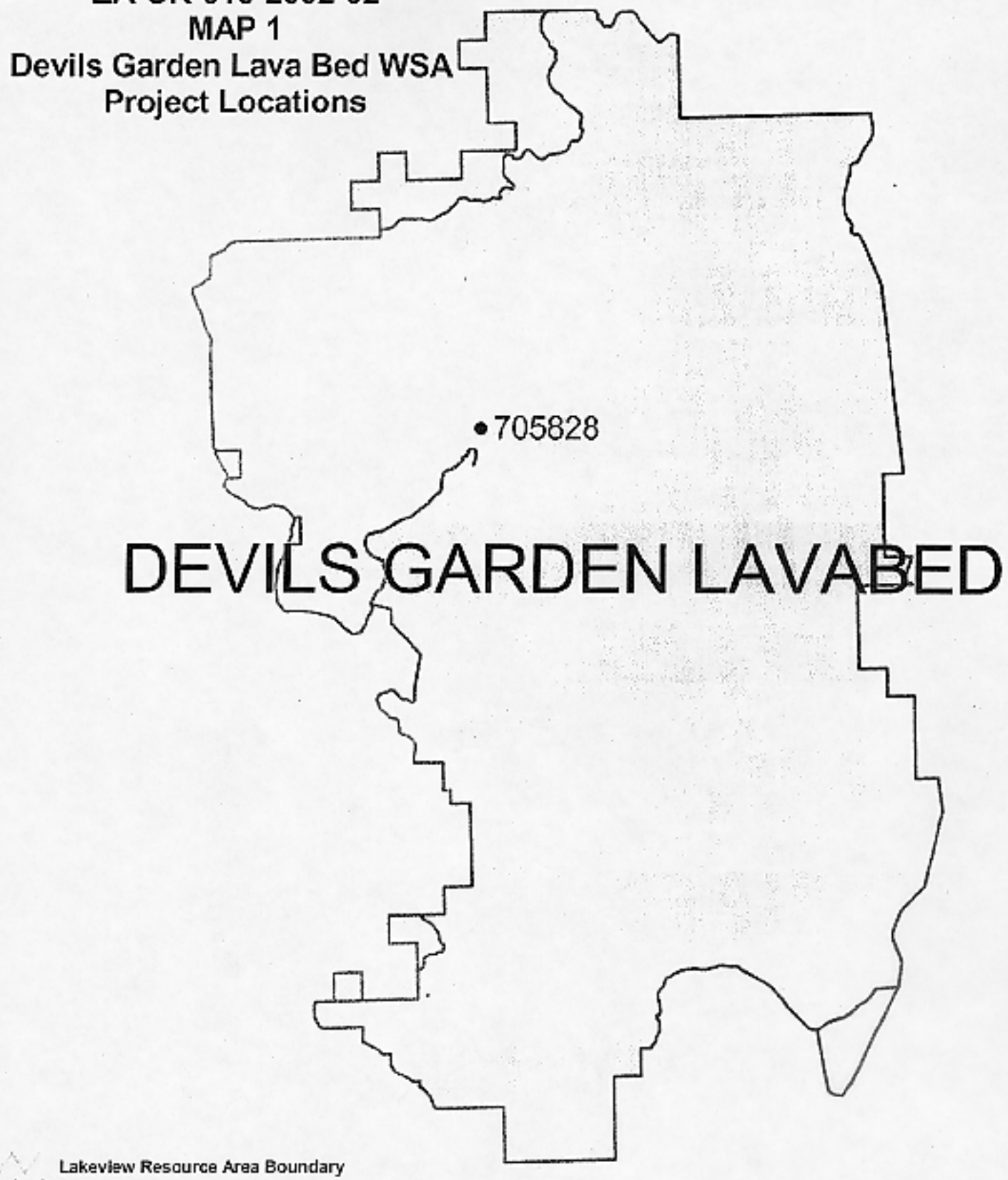
_____ _____

Area Manager Date

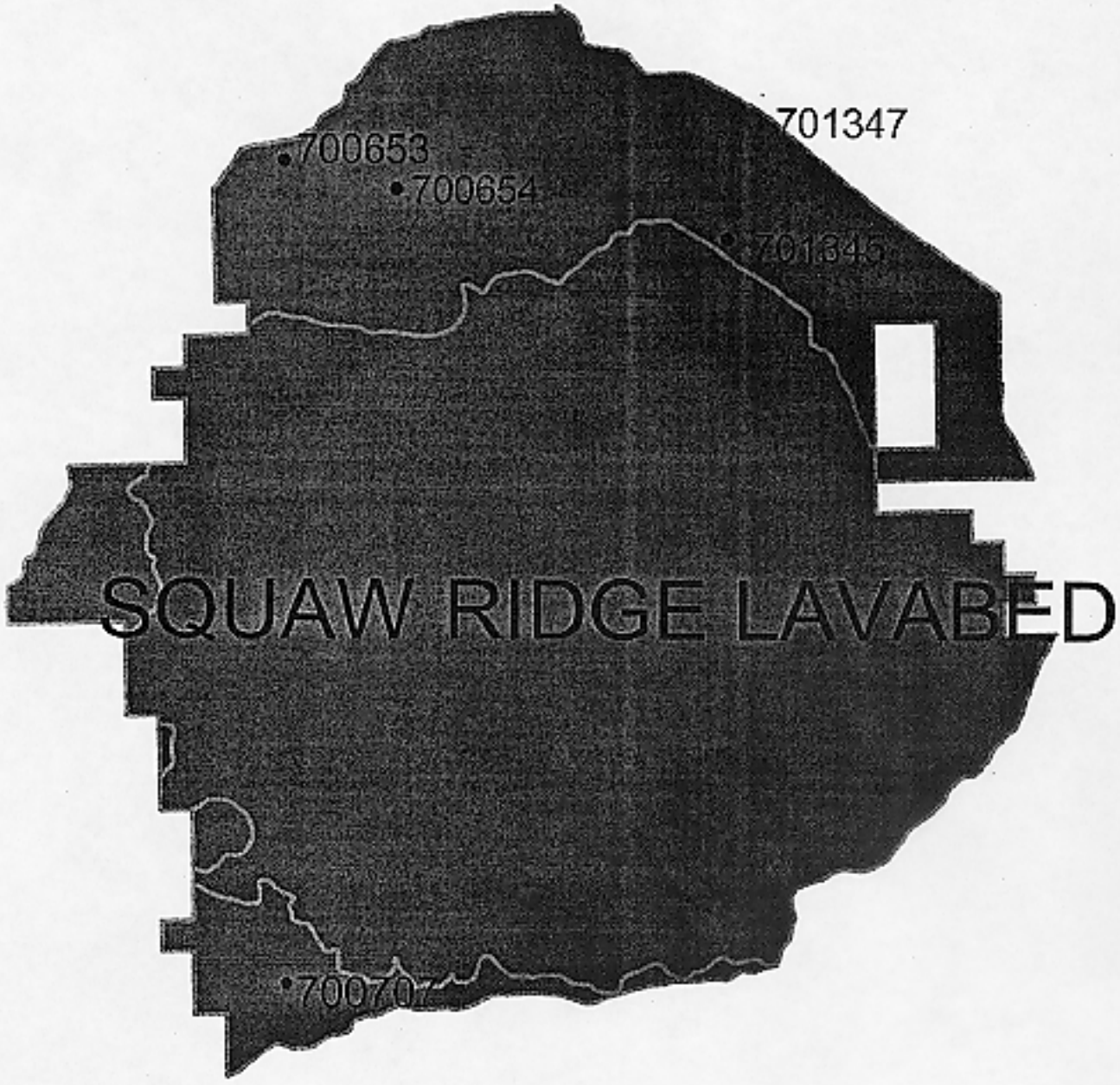
*Please return a copy of this analysis to the Outdoor Recreation Planner for inclusion in the appropriate Wilderness file.

**"Substantially unnoticeable" according to the IMP, "means that an action must be so insignificant as to be only a very minor feature or is not distinctively recognizable by the average visitor as being human made or human-caused because of age, weathering or biological change." The Bureau's Visual Contrast Rating Form (8400-4) may be used as an aid to determine whether or not the project is substantially unnoticeable.

EA-OR-010-2002-02
MAP 1
Devils Garden Lava Bed WSA
Project Locations

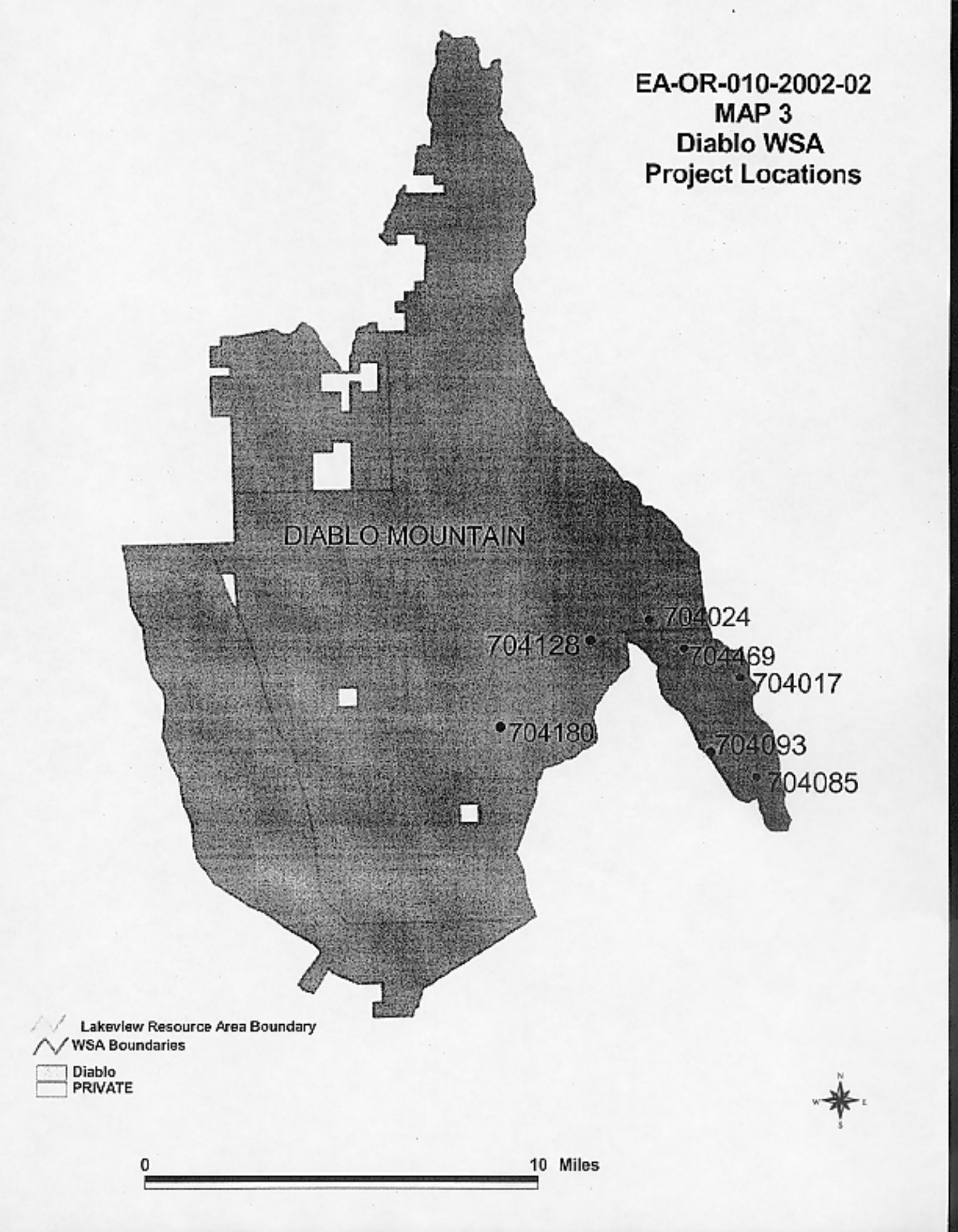


EA-OR-010-2002-02
MAP 2
Squaw Ridge Lava Bed WSA
Project Locations

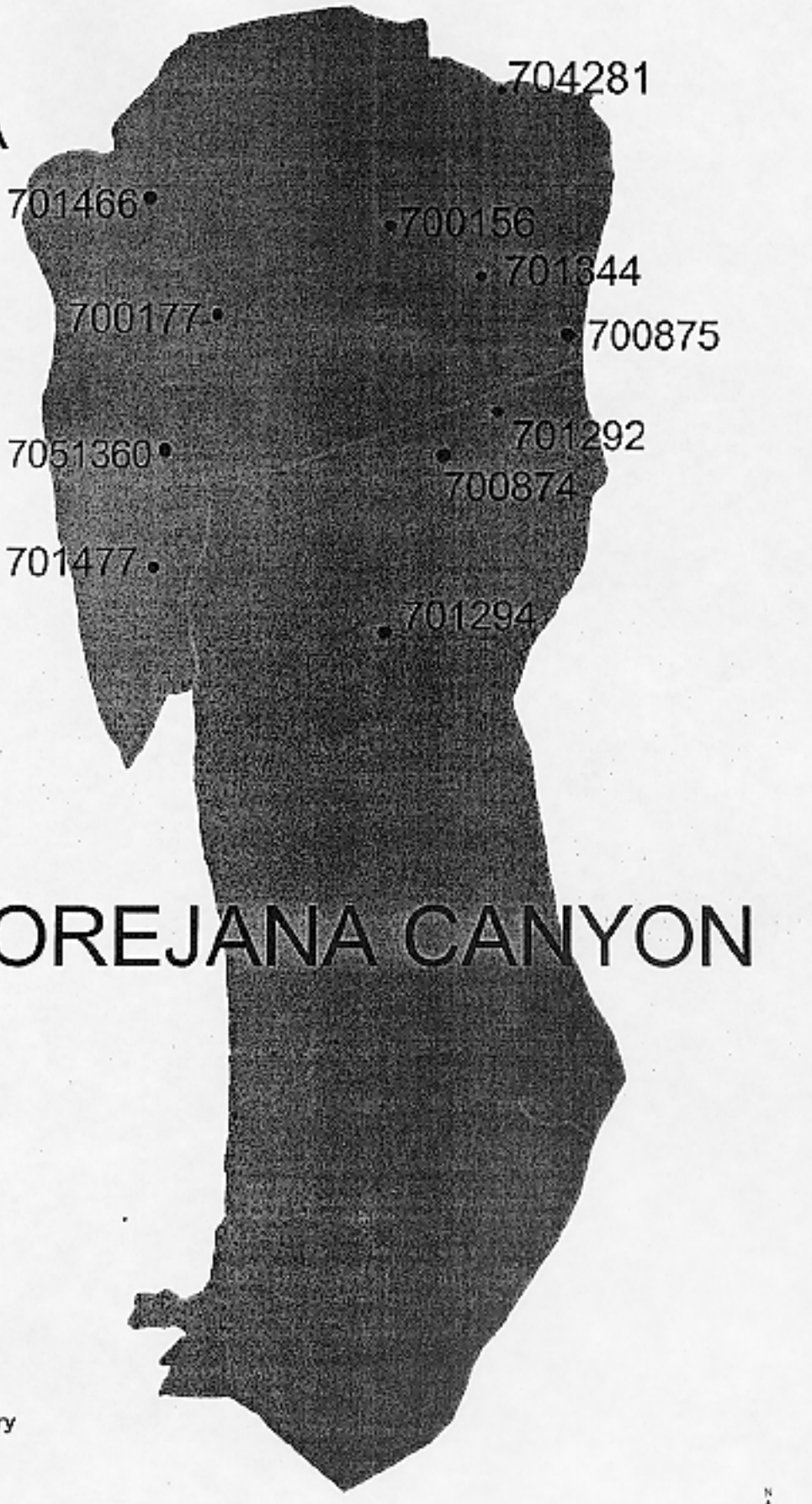


Lakeview Resource Area Boundary
WSA Boundaries
Squaw Ridge Lava Bed
PRIVATE

0 5 Miles


EA-OR-010-2002-02
MAP 3
Diablo WSA
Project Locations
DIABLO MOUNTAIN
704024
704128
704469
704017
704180
704093
704085
Lakeview Resource Area Boundary
WSA Boundaries
Diablo
PRIVATE
N
W
E
S
0
10 Miles

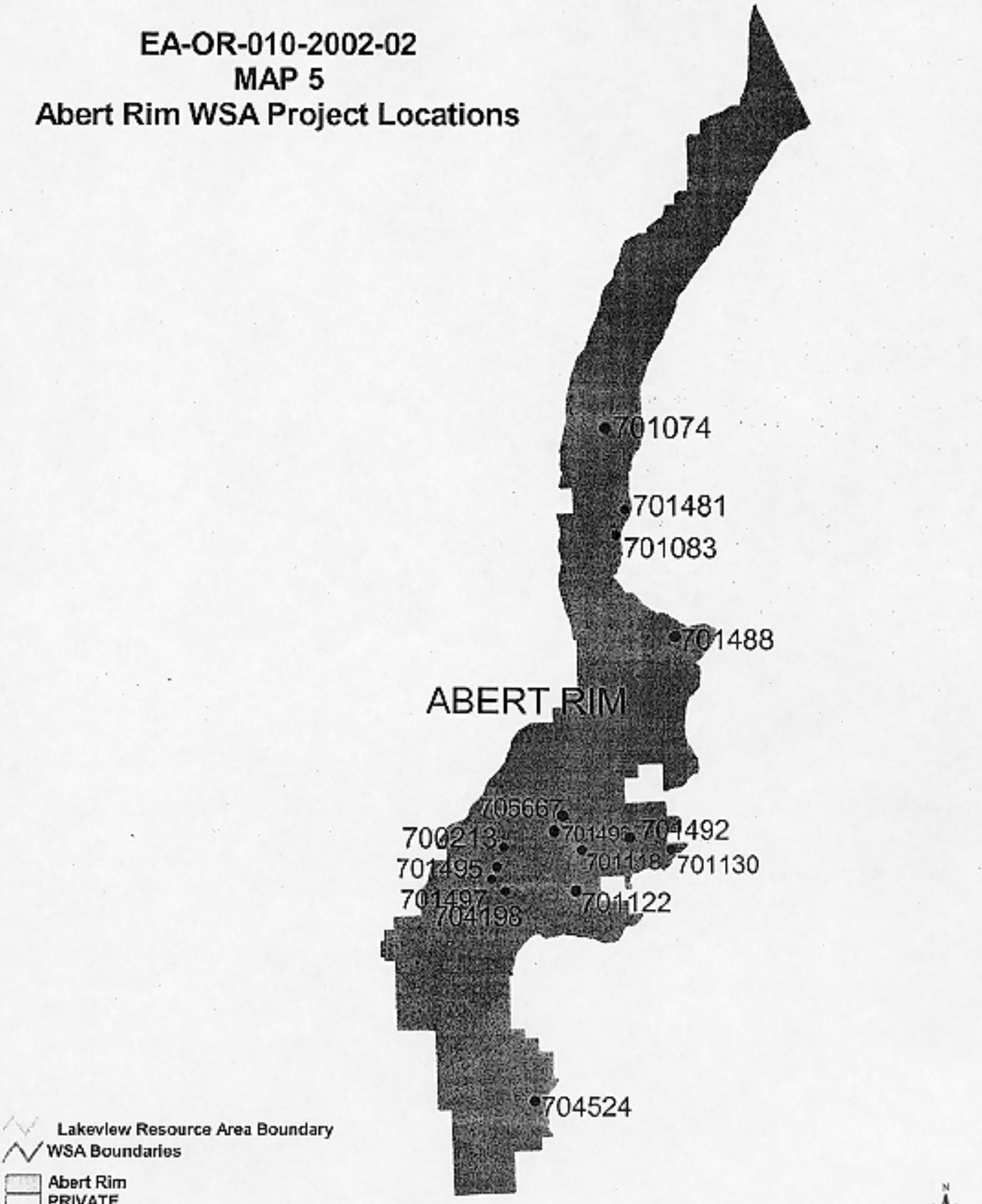
EA-OR-010-2002-02
MAP 4
Orejana Canyon WSA
Project Locations



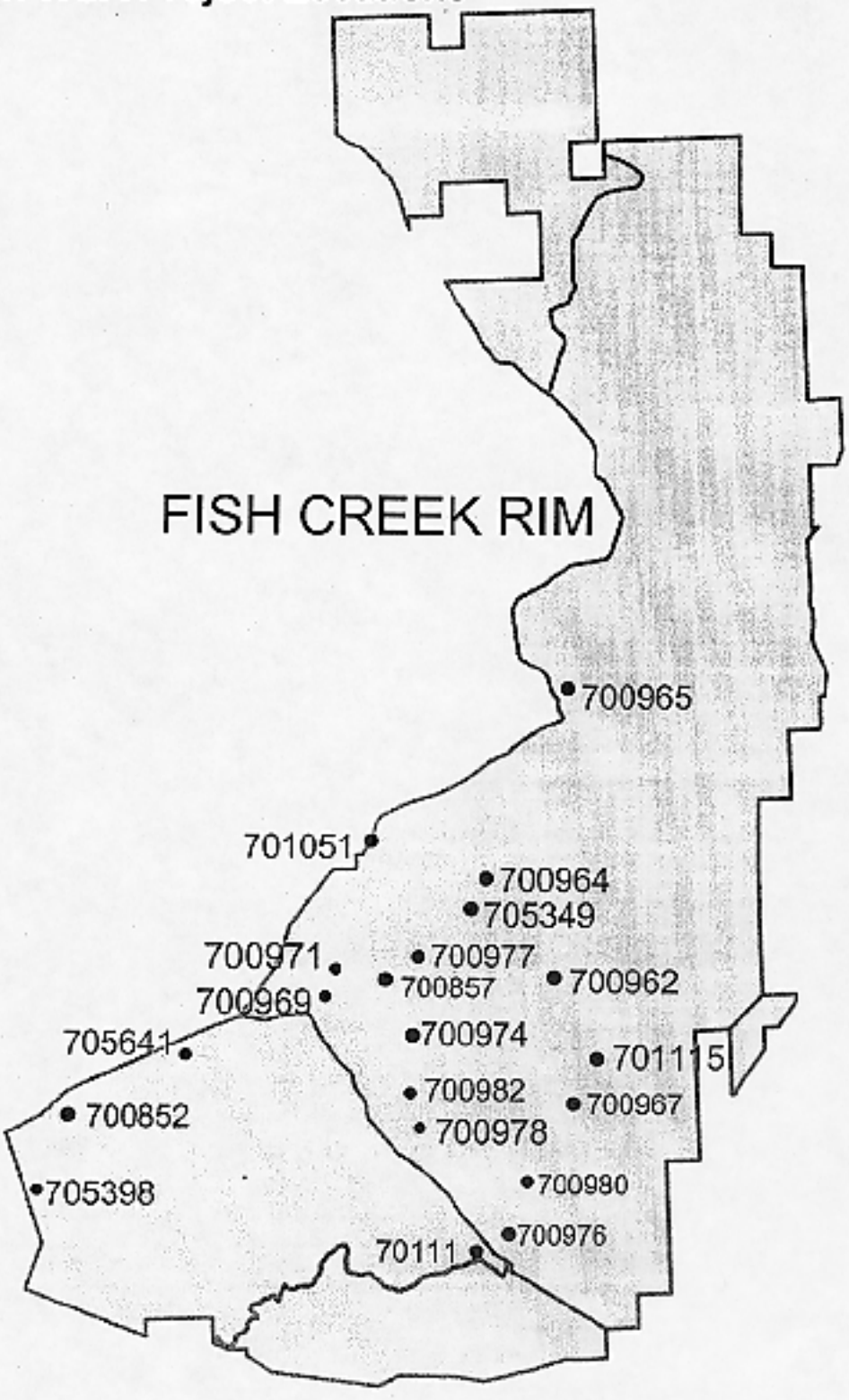
Lakeview Resource Area Boundary
WSA Boundaries
Orejana Canyon
PRIVATE

0 5 Miles

EA-OR-010-2002-02
MAP 5
Abert Rim WSA Project Locations



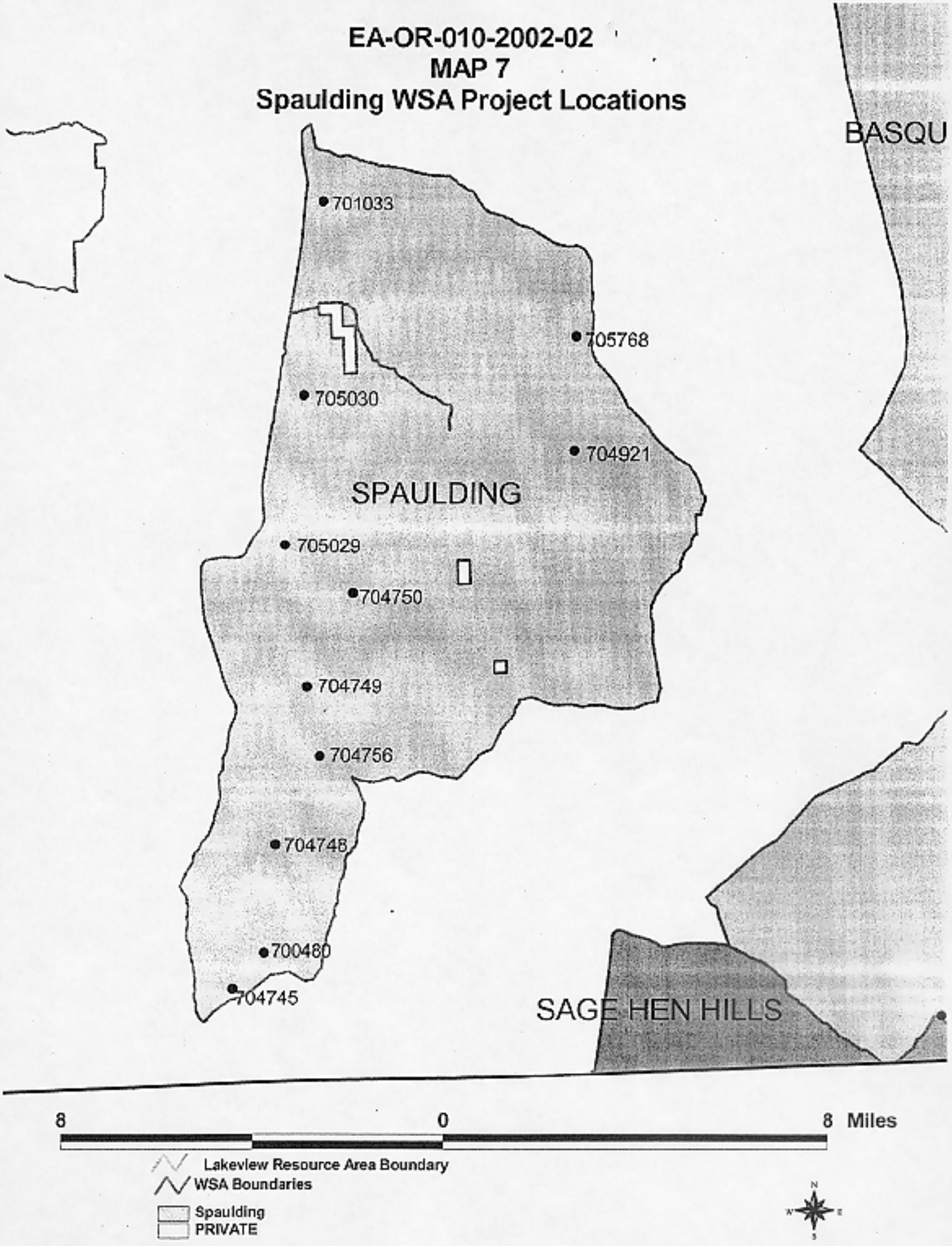
EA-OR-010-2002-02
MAP 6
Fish Creek Rim WSA Project Locations



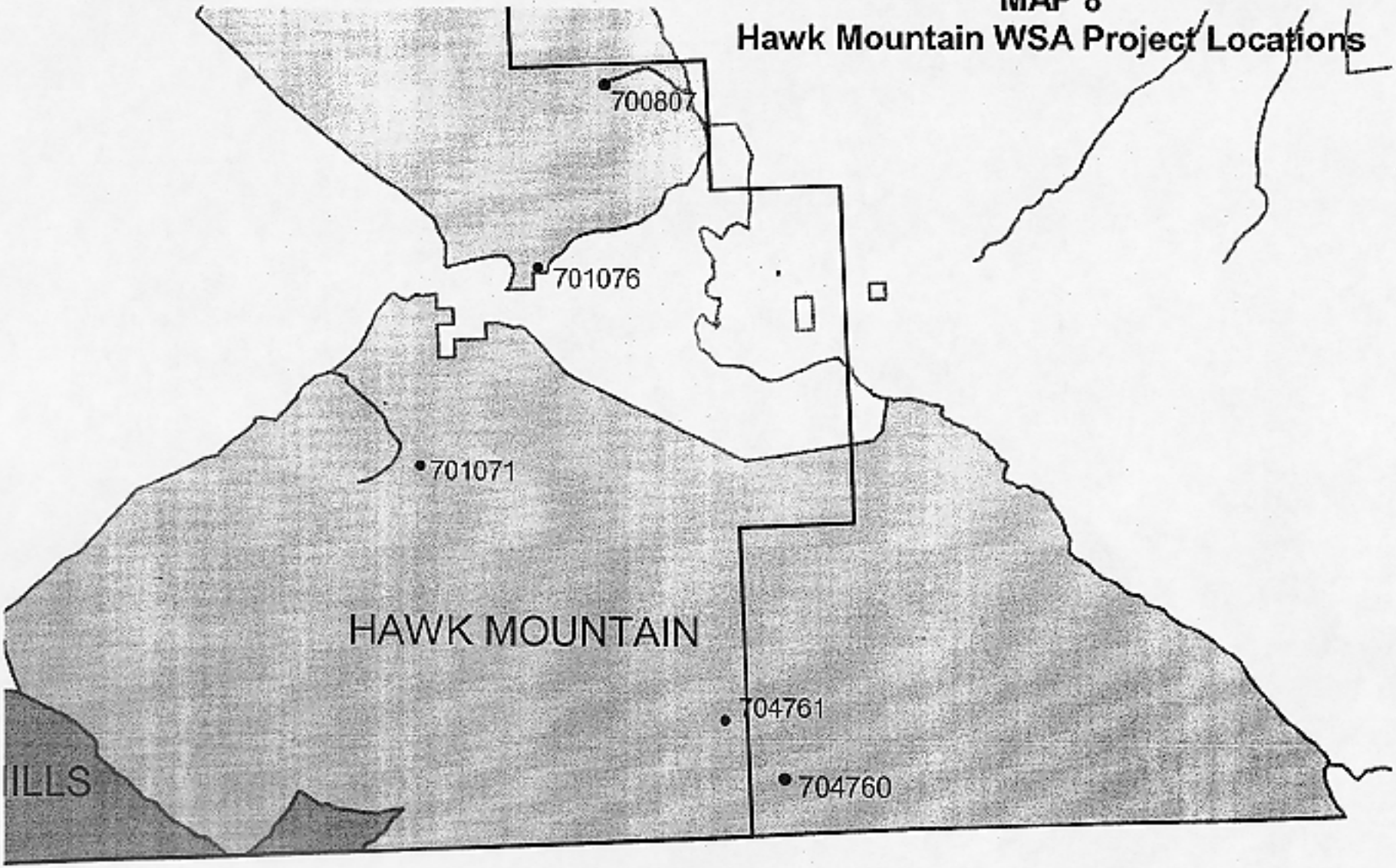
Lakeview Resource Area Boundary
WSA Boundaries
Fish Creek Rim
PRIVATE

5 0 5 M

EA-OR-010-2002-02
MAP 7
Spaulding WSA Project Locations



EA-OR-010-2002-02
MAP 8
Hawk Mountain WSA Project Locations

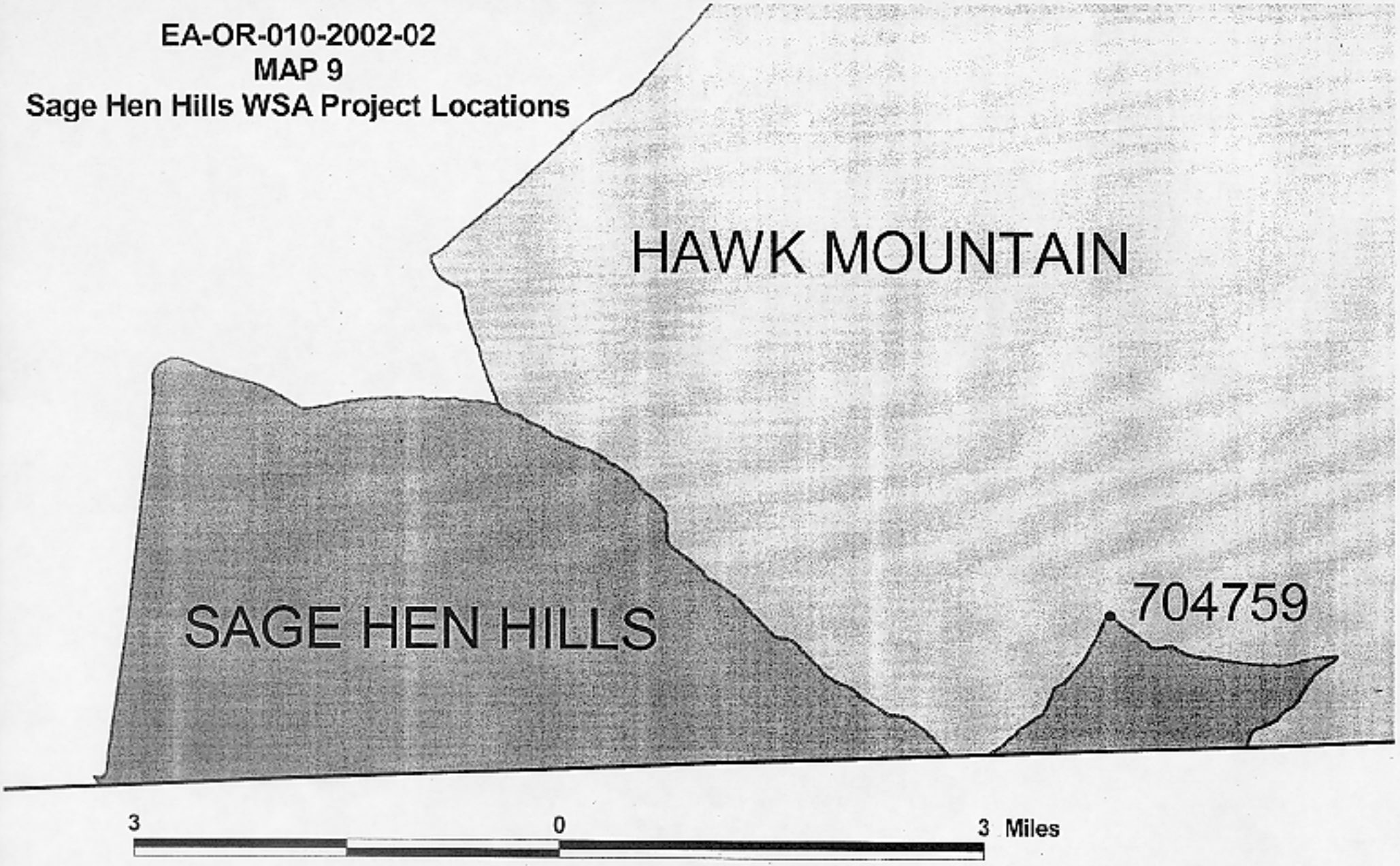


Lakeview Resource Area Boundary
WSA Boundaries
Hawk Mountain
Sage Hen Hills
Basque Hills
PRIVATE

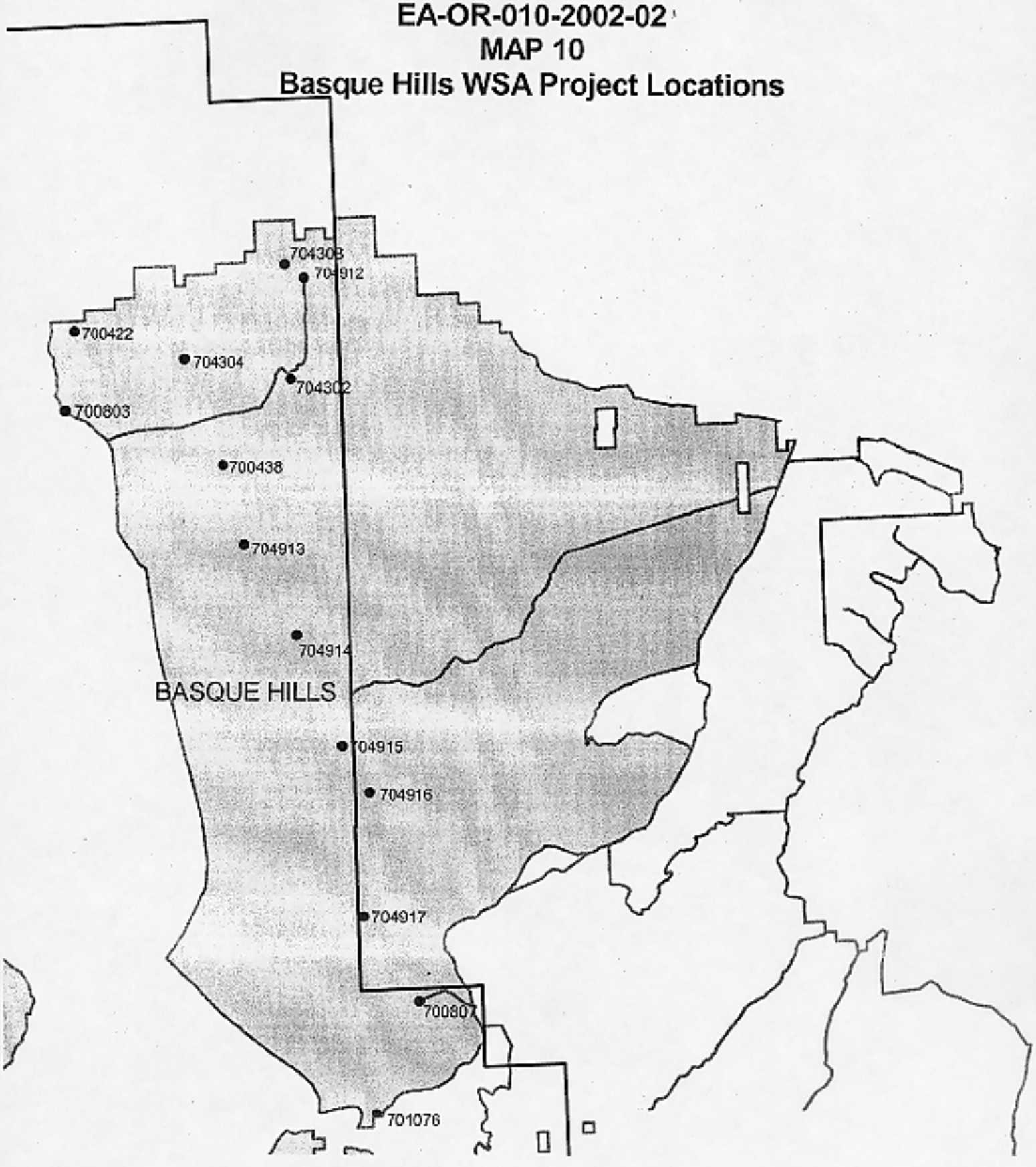
N
W
E
S

6 0 6 12 Miles

EA-OR-010-2002-02
MAP 9
Sage Hen Hills WSA Project Locations



EA-OR-010-2002-02
MAP 10
Basque Hills WSA Project Locations



7 0 7 Miles

Lakeview Resource Area Boundary
WSA Boundaries
Basque Hills
PRIVATE